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# CURRENT LITERATURE IN AGRICULTURAL ENGINEERING

UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF AGRICULTURAL ENGINEERING

WASHINGTON, D. C.

Vol. 4, No. 8.

March, 1935.

## Agriculture.

Agricultural outlook for South Carolina, 1935. 1935. 14p. Clemson Agricultural College. Circular no.139.

Agricultural planning as an aspect of state and national planning. By A. R. Mann. Science. v.81, no.2089. January 11, 1935. p.32-35. If present planning movement survives, and if in even modest degree it approximates its potentialities, farming and rural life in America stand to gain in many ways vital to rural social and economic progress. Whole movement has not only yielded vast bodies of knowledge and correlations of survey and research findings hitherto unavailable in such revealing form, but more significantly it has fostered comprehensive thinking about land and water resources of nation, facts which influence agricultural prosperity and attractiveness in this country, and place of agriculture and amenities of rural life in any proposals for state and national development.

Applying Science to Agriculture. 1934. 312p. Oklahoma. Agricultural experiment station. Report, 1932-1934.

New Mexico agricultural outlook - 1935. 1934. 20p. New Mexico college of agriculture and mechanic arts. Agricultural extension service. Extension circular no. 134.

1935 agricultural outlook for California. 1934. 106p. California. Agricultural extension service. Circular no.90.

Sixth biennial report for the fiscal years ending June 30, 1933 and June 30, 1934. 1934. 130-. Michigan State department of agriculture, Lansing, Mich.

## Air Conditioning.

Study of summer cooling in research residence for summer of 1931. By A. P. Kratz, S. Konzo, M. K. Fahnstock and E. L. Broderick. Heating, Piping and Air Conditioning. v.7, no.1. January, 1935. p.29-40. Paper is result of research conducted at University of Illinois, in cooperation with A.S.H.V.E. Research Laboratory and National Warm Air Heating and Air Conditioning Association. Conclusions: (1) Indoor temperature of approximately 80 °F with relative humidity below 55 per cent results in satisfactory comfort conditions in living quarters of residence. (2) Introduction of approximately one air change per hour of outdoor air for purpose of ventilation is sufficient to prevent objectionable odors. (3) Mechan-



ical refrigeration unit capable of producing  $2\frac{1}{2}$  tons of refrigeration is sufficient to maintain conditions of comfort on two stories of residence similar to Research Residence when outdoor temperature does not exceed 103 °F. and amount of outdoor air equivalent to one air change per hour is used for purpose of ventilation. (4) Use of fan in forced-air heating system to circulate outdoor air at night amounting to 9.5 air changes per hour is not as effective in cooling residence as a whole when second story windows only are opened as it is when windows on both stories are opened. (5) Cooling load during daytime can be reduced by supplementing artificial cooling during day with cooling by means of outdoor air circulated at night. (6) Satisfactory cooling with outdoor air at night probably cannot be accomplished by employing less than 9 air changes per hour. Results will ultimately comprise part of a bulletin of Engineering Experiment Station.

#### Alcohol.

Power alcohol: two sides. By Dallas McKown. Country Home. v.59, no.3. March, 1935. p.40-41.

Use of power alcohol abroad. Australian Sugar Journal. v.26, no. 10. January 8, 1935. p.535. At present time use of mixture of alcohol with petrol, is compulsory in thirteen countries, namely: Germany, Austria, Brazil, Bulgaria, Chile, Ecuador, France, Hungary, Italy, Lithuania, Poland, Czechoslovakia and Yugoslavia. Alcoholised fuels are used in other countries, without any special legislation thereon, namely: England, Cuba, Denmark, the United States, Natal (South Africa), Sweden and Switzerland.

#### Associations.

Forty-eighth convention of the Association of Land-Grant Colleges and Universities. Experiment Station Record. v.72, no.1. January, 1935. p.1-4, 143-144.

Plans for 1935 A.S.A.E. Meeting. Agricultural Engineering. v.16, no.2. February, 1935. p.75. June 17 to 20, inclusive.

#### Building Construction.

Building bracing highly important. Wisconsin Agriculturist and Farmer. v.62, no.2. January 19, 1935. p.5.

Details for better rural schools. By Hugh M. McClure. American Builder and Building Age. v.57, no.3. March, 1935. p.46-47.

Directions for laying out the foundation for a building. By Ralph L. Patty. 1934. 2p. mimeographed. North Dakota state college of agriculture and mechanic arts. Special extension circular no.41.

Effective and inexpensive bracing methods for farm buildings. By Ralph L. Patty. 1934. 4p. mimeographed. South Dakota state college of agriculture and mechanic arts. Special extension circular no.37.



Building Construction. (Cont'd)

House of plywood. American Lumberman. no.3042. March 2, 1935.  
p.22-23.

Household closets and storage spaces. By Julia Pond and Evelyn Turner.  
1934. 30p. Michigan state college of agriculture and applied  
science. Extension division. Extension bulletin no. 142.

How to "shrink-proof" wood construction. By Frank R. Walker. American  
Builder and Building Age. v.57, no.3. March, 1935. p.64-65.

Plywood writes a new chapter in home building. American Lumberman.  
no.3041. February 16, 1935. p.1, 57.

Publications relating to building codes and construction practice, home  
building and maintenance, home ownership. 1934. 3p. mimeographed.  
U.S. National Bureau of Standards. Letter circular no. L.C. 432.

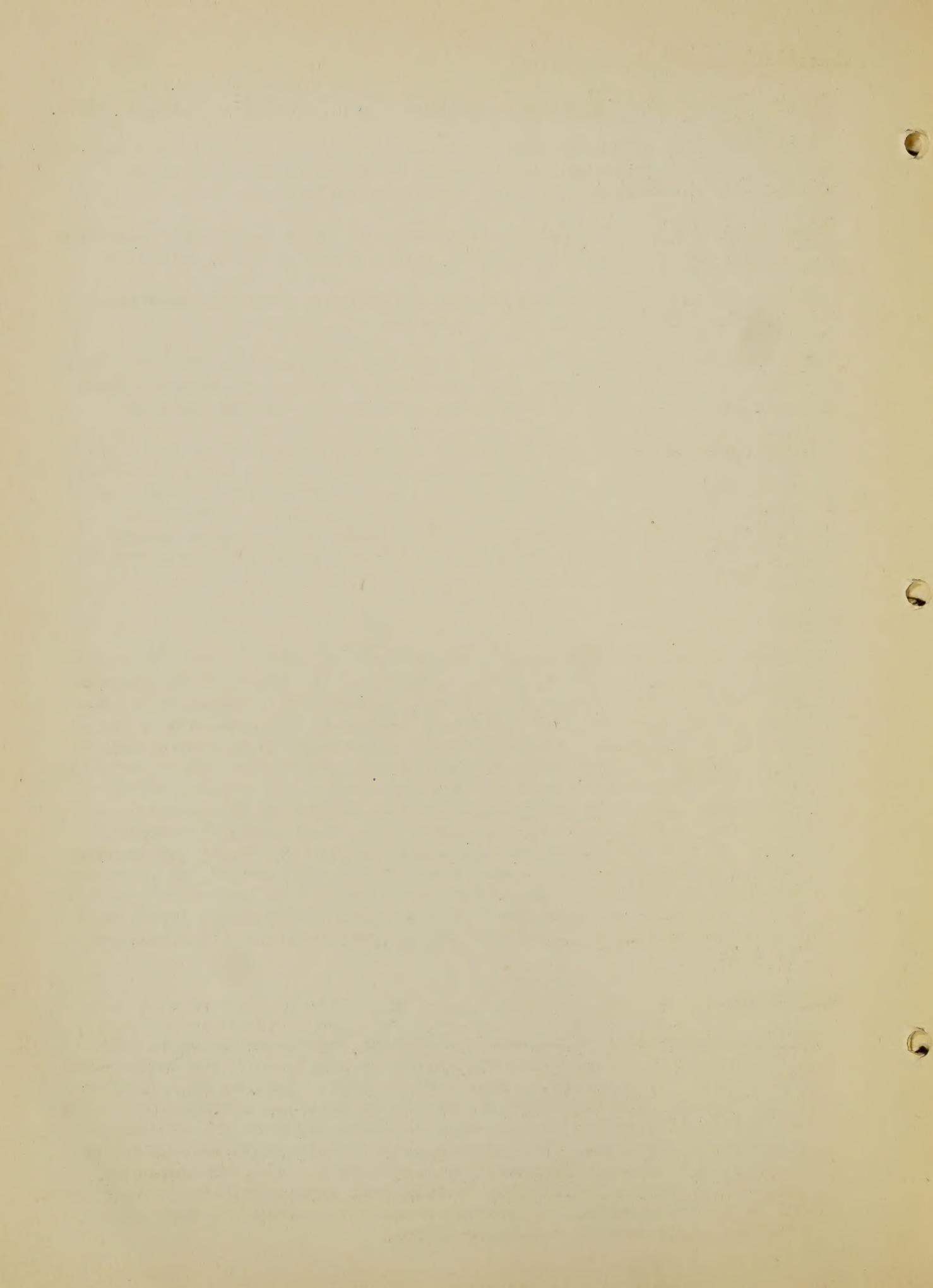
Replacement market of farm buildings offers big opportunity for clay.  
By C. T. Bridgeman. Brick and Clay Record. v.86, no.2. February,  
1935. p.62-63. Recently completed rural housing survey shows that  
nearly three in every four is 50 years old or over. Enumerators  
considered that one in every 8 houses should be replaced. Annual  
depreciation on service buildings is two and three times as great as  
for residences.

Concrete.

Pressure of concrete on forms. By Harrison G. Roby. Civil Engineering.  
v.5, no.3. March, 1935. p.162-165. In recent tests pressure  
was found to vary with speed with which forms were filled, with tem-  
perature of concrete, with amount of cement in mix, and with water  
content of concrete. Although pressure increase up to 4 or 5 feet of  
head closely followed curve of theoretical pressure of liquid weighing  
same as fresh concrete rate of increase dropped off rapidly above  
that head. After reaching maximum value, depending on character of  
concrete, pressure actually decreased with still further increase in  
head. Of special significance is fact that mix poured in hot weather  
exerted pressure very much less than did same mix poured during normal  
weather, and that lean, dry mixes exerted much less pressure than rich  
ones. Advantage of these facts can be taken by designing forms for  
particular mix to be placed and for conditions of pouring specified  
for work

Conservation.

Complete conservation unit, based on logical topographical unit, Elm  
Creek watershed is valuable demonstration. By T. C. Richardson. Farm  
and Ranch. v.53, no.22. November 15, 1934. p.2, 4, 10. Linking  
flood control with immediate objectives of securing better crop yields  
and saving soil brings even greater force to argument for systematic  
conservation program. When present public works funds have been ex-  
hausted, and Federal Government withdraws from field, we should be  
prepared by proper legislation to take over responsibility through local  
and State Governments, and provide means for correlating work of in-  
dividual landowners by watershed units.



Conservation. (Cont'd.)

Control and conservation. Nebraska Farmer. v.77, no.2. January 19, 1935. p.3, 16, 20. Planned agriculture and land use policy are discussed.

Cotton and Cotton Ginning.

Cotton root rot as affected by crop rotation and tillage at San Antonio, Tex. By George T. Ratcliffe. 1934. 31p. U.S. Department of Agriculture. Technical bulletin no.436.

Economic advantages and disadvantages of the various methods used in harvesting cotton in Oklahoma. By Clyde C. McWhorter and Roy A. Ballinger. Oklahoma Agricultural experiment station. Report, 1932-1934. p.217-223.

Improving the uniformity of cotton fiber by the use of the Pressley Sorter. By E. H. Pressley. 1934. 127-153p. Arizona Agricultural experiment station. Technical bulletin no.54.

Dams.

About that Verde dam. By Britton Diller. Arizona Producer. v.13, no.23. February 15, 1935. p.6-7. Planned long ago by U. S. for Salt River project - now a vital need. 20,000 acres of land within Salt River project were left out of cultivation last year because crops on these acres could not be economically grown with past year's allotment of three acre-feet of water per acre.

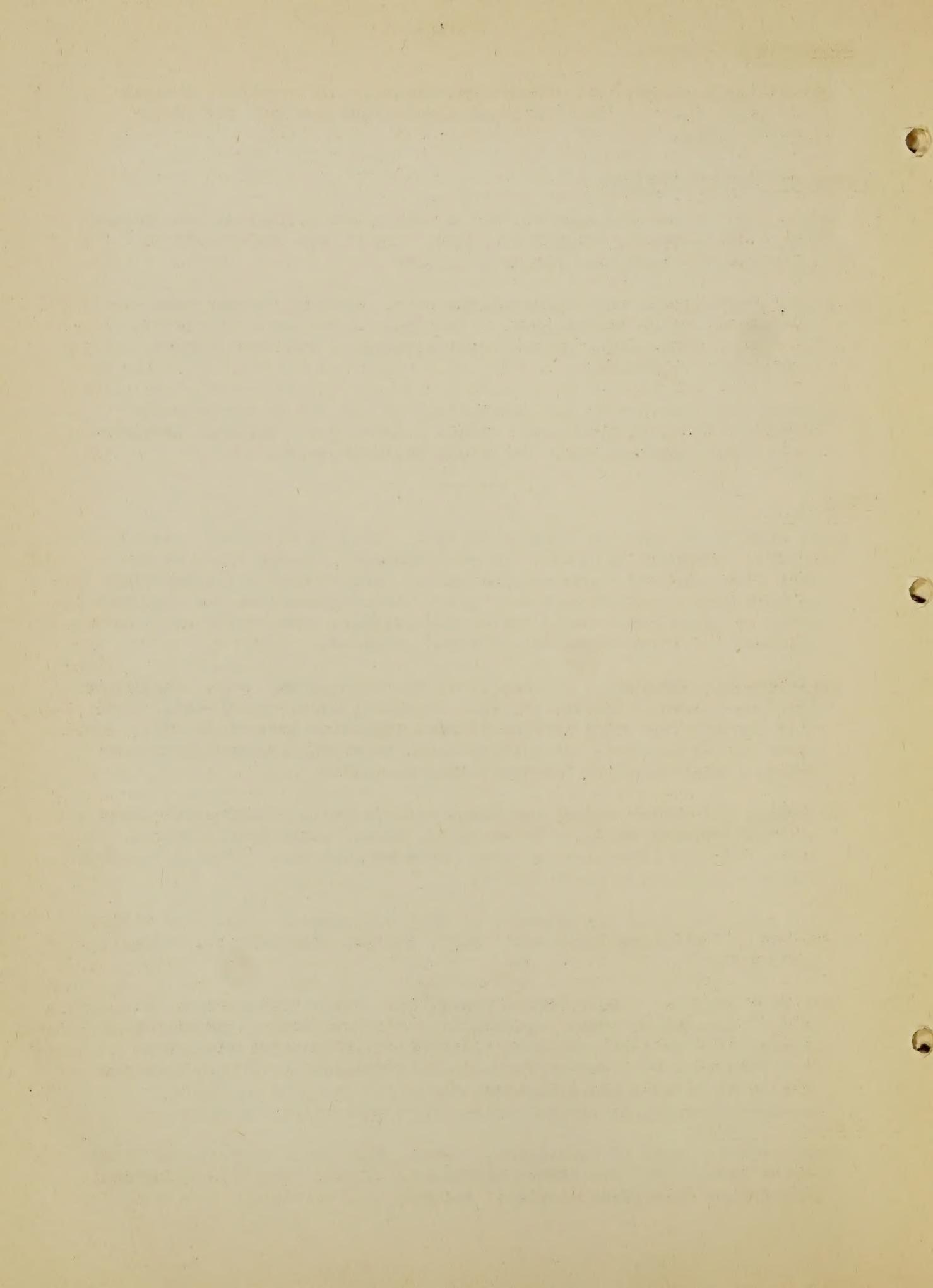
Construction, subsidence and repair of San Gabriel dam No.2. Engineering News-Record. v.114, no. 10. March 7, 1935. p.343-345. Rock-fill dam 265 feet high settles 12 feet following torrential rain. Concrete facing damaged. Consulting board recommends repairs with temporary timber facing. Reconstruction described.

Diversion and outlet tunnel for Casper-Alcova dam. Engineering News-Record. v.114, no.7. February 14, 1935. p.250-252. Tunnel driven through limestone carrying hot water and gas. Grouting checked inflow and produced tight lining.

Field measurement of ice pressure at Hastings lock and dam. By Hibbert M. Hill. Military Engineer. v.27, no.152. March-April, 1935. p.119-122.

Fort Peck project. By Theodore Wyman, Jr. Civil Engineering. v.4, no.9. September, 1934. p.473-477. In Northeastern Montana huge construction project that will cost \$86,000,000 is now under way. This structure will dam upper reaches of Missouri River and equalize flow so as to minimize disastrous floods on one hand and benefit low-water navigation for 800 miles along lower river on other.

Hydroelectric power in Washington. Part III. Brief on proposed Grand Coulee dams. By Carl Edward Magnusson. 1935. 29p. Washington. Engineering experiment station. Bulletin no.78.



Dams. Cont'd.

Stabilizing constructed masonry dams by means of cement injections.

By D. W. Cole. Proceedings of American Society of Civil Engineers. v.61, no.2. February, 1935. p.187-224. In scope work embraced three principal gravity dams of rubble masonry, faced with ashlar, aggregating 14,000 feet in length, and ranging from 30 feet to 190 feet in height. These structures, situated in Western Ghauts of India, about sixty miles inland from Bombay, at 2,200 feet above sea level, have been in use since about 1917 for storage of water for hydroelectric development under available head of 1,700 feet. In recent years increase of seepage through and under dams gave rise to some apprehension as to their continued stability, and remedy of cement injections was prescribed by committee of consulting engineers. Paper describes methods and results of borings and injection of 64,000 barrels of Portland cement into 380,000 linear feet of drill holes in three dams, working under full reservoir conditions.

Verde again turned down. Arizona Producer. v.13, no.23. February 15, 1935. p.6. Final rejection by PWA paves way for dam for Salt River Valley.

Drainage.

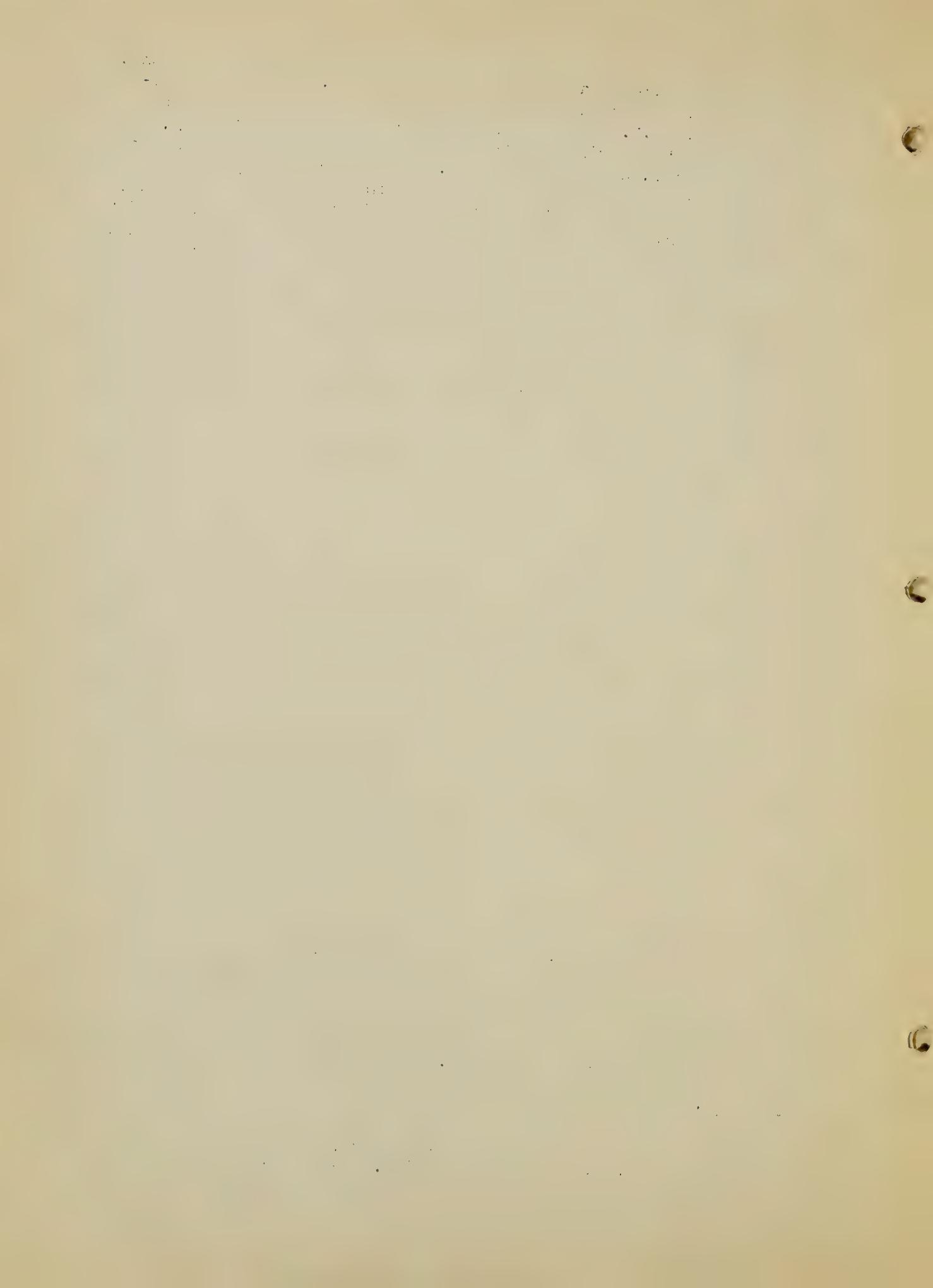
New mole draining machine. By H. Janert. Australian Sugar Journal. v.26, no. 10. January 8, 1935. p.534. Machine consists of mole plow carrying special equipment which forms endless porous concrete pipe in tunnel left by mole. Pipe is made while mole is actually passing through soil. Main parts of machine are pair of sledges carrying coulter and strong share, with mole at its lower end. Steering is done by pulling drawbar to one side or other. Hopper contains dry cement-sand mixture which is forced by means of positive feed down pipe behind share to plug which forces it out into an annular shape, thus forming hollow pipe in tunnel made by mole. At same time inside of pipe is moistened with small supply of water delivered by hollow plug through porous ring of artificial pumice, which is connected to small reservoir of water by tube running down inside of share. Sufficient rigidity is thus given to pipe to hold it in position while it is absorbing sufficient moisture to set hard.

Droughts.

Extreme drought conditions continue on Western Great Plains. Engineering News-Record. v.114, no. 10. March 7, 1935. p.364. Only copious spring rains will avert a greater shortage of water for grain, range and community water supply than was suffered last year. Drought not only is unrelieved but has been intensified during winter by lack of normal rainfall. In most parts of this region supply of moisture in ground is less than it was year ago, and dust storms prevalent in spring and summer of 1934 have already swept wide areas.

Electric Wiring.

Farm wiring. By C. A. Cameron Brown. Oxford, 1935. 32p. Institute for research in agricultural engineering. University of Oxford.



Electricity on the Farm.

Baby pigs prefer brooders. Electricity on the Farm. v. 8, no. 2. February, 1935. p. 14-15.

Electric brooding. California Cultivator. v. 82, no. 1. January 5, 1935. p. 19. Increasing use of electricity in the artificial brooding of poultry is due to four major advantages: Saving in labor costs, accuracy in maintaining uniform brooder temperature that is so necessary, practically eliminating any danger of fire, greater convenience and dependability.

Electric hovers prove practical for winter brooding. By T. E. Heinton. Electricity on the Farm. v. 8, no. 2. February, 1935. p. 7-9.

Farmers stick to electricity. Implement and Tractor Trade Journal. v. 50. no. 3. February 9, 1935. p. 24. Recheck on area covered in Red Wing project shows but little change after ten years except for ranges, despite reverses of depression

TVA and farm electrification. By Davis F. Lilienthal. Bureau Farmer. v. 10, no. 6. February, 1935. p. 9-10. Discusses new co-operative power distributing system organized at Corinth, Mississippi.

Erosion Control.

Acres gone broke. By Wheeler McMillen. National Waltonian. v. 2, no. 6. December, 1934. p. 8-9. Too much spending and not enough conserving have forced too many acres into bankruptcy. Now we are challenged with gigantic task of rehabilitating our worn out land in order to restore rapidly vanishing heritage of outdoor resources.

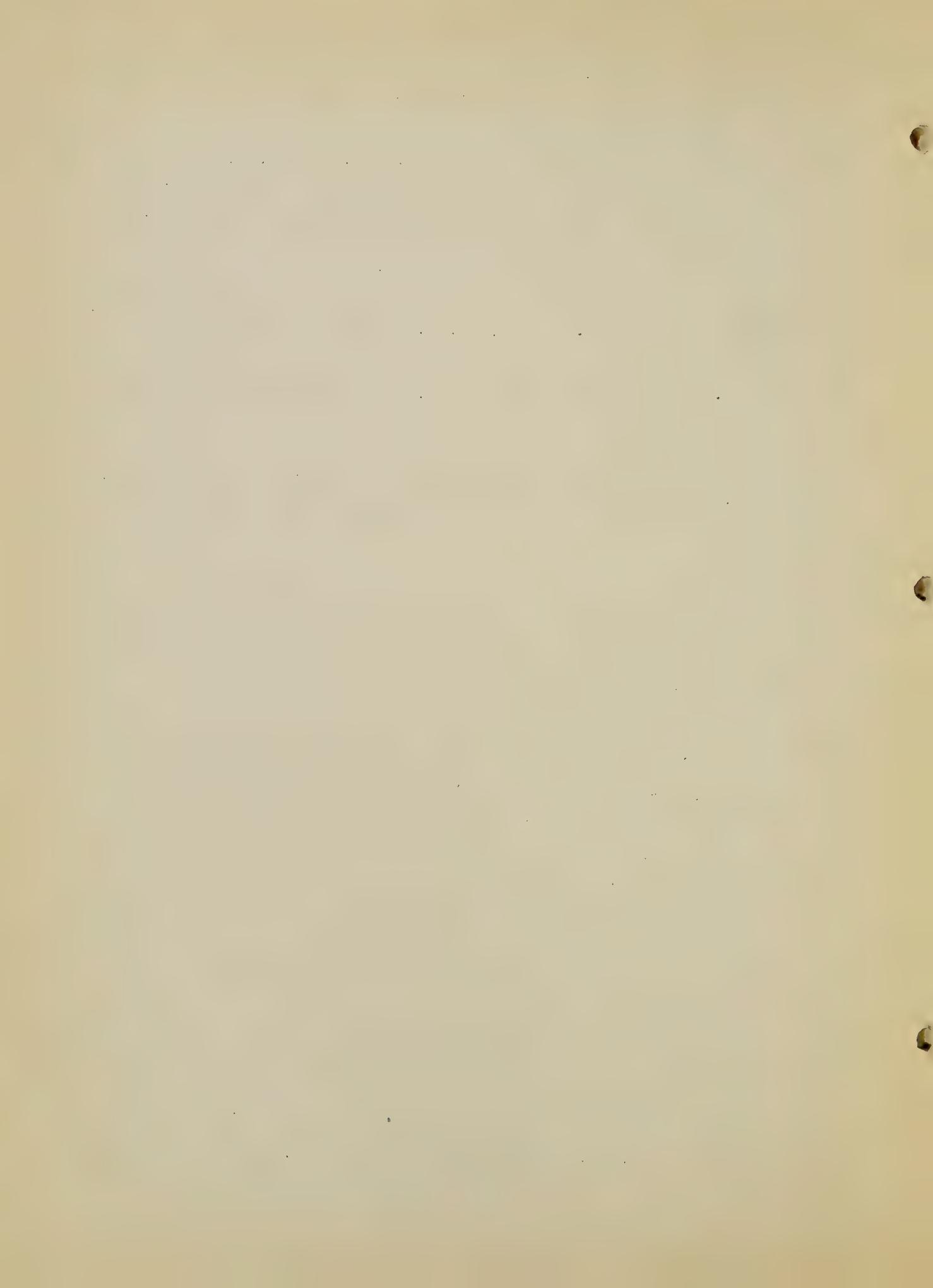
Anchoring farm lands. By Ivy M. Howard. Successful Farming. v.33, no.3. March, 1935. p. 12-13, 69-70. Midwest farmers discovered that erosion control and strip farming not only saved acres of land but enabled them, through the drought, to grow better than normal crops, and keep the springs flowing.

Beach-protection work on California coast roads. Engineering News-Record. v. 114, no. 7. February 14, 1935. p. 253-254. Groins and seawalls of various types used extensively. Concrete has lasted well. Seawall at Ventura made of steel sheetpiling with timber top.

Erosion control in Navajo Reservation. By Hugh G. Calkin. The Land, Today and Tomorrow. v. 2, no. 1. January, 1935. p. 19-23.

Erosion control structures - drop inlets and spillways. By Lewis Hanford Kessler. 1934. 66p. Wisconsin. Engineering experiment station. Research bulletin no. 122. Presents experimental tests and investigations of hydraulic characteristics.

Floods show need for erosion control. By N. E. Winters. The Land, Today and Tomorrow. v.2, no. 2. February, 1935. p.22-24.



Erosion Control. Cont'd.

Fundamental concepts of erosion. By W. C. Lowdermilk. The Land, Today and Tomorrow. v. 2, no. 1. January, 1935. p. 9-12.

Game restoration fostered in combating soil erosion. Science News Letter. v. 27, no. 722. February 9, 1935. p. 86.

Land use and erosion in the West. By A. L. Hafemrichtor. The Land, Today and Tomorrow. v. 2, no. 1. January, 1935. p. 5-8.

Looking ahead. By H. H. Bennett. The Land, Today and Tomorrow. v. 2, no. 1. January, 1935. p. 1-4. Stresses need for cooperation with other agencies as Soil Erosion Service swings into new and vital year.

Making a reconnaissance erosion survey map. By W. F. Beaman. The Land, Today and Tomorrow. v. 2, no. 1. January, 1935. p. 29-31.

Plant problems in California gullies. By A. E. McClymonds. The Land, Today and Tomorrow. v. 2, no. 2. February, 1935. p. 1-5. Vegetation of all types is proving invaluable in halting barranca erosion in West.

Soil erosion. By C. Y. Thompson. Nebraska Farmer. v. 77, no. 2. January 19, 1935. p. 17.

Soil erosion bibliography. By Lillian H. Wieland. Soil Erosion Service. U. S. Department of the Interior, 1935. 124p. Multigraphed.

Soil erosion shown as manifold menace. Science News Letter. v. 27, no. 721. February 2, 1935. p. 76.

Rain may collect plant foods. Pacific Rural Press. v. 129, no. 3. February 19, 1935. p. 57. Fertilization is nothing but artificial means to keep all necessary plant foods available to various plants or crops on certain piece of soil, but when we consider that it is estimated that in United States twenty times as much plant food is carried away with soil by erosion as is lost annually in growing of crops we can see what vital problem erosion becomes.

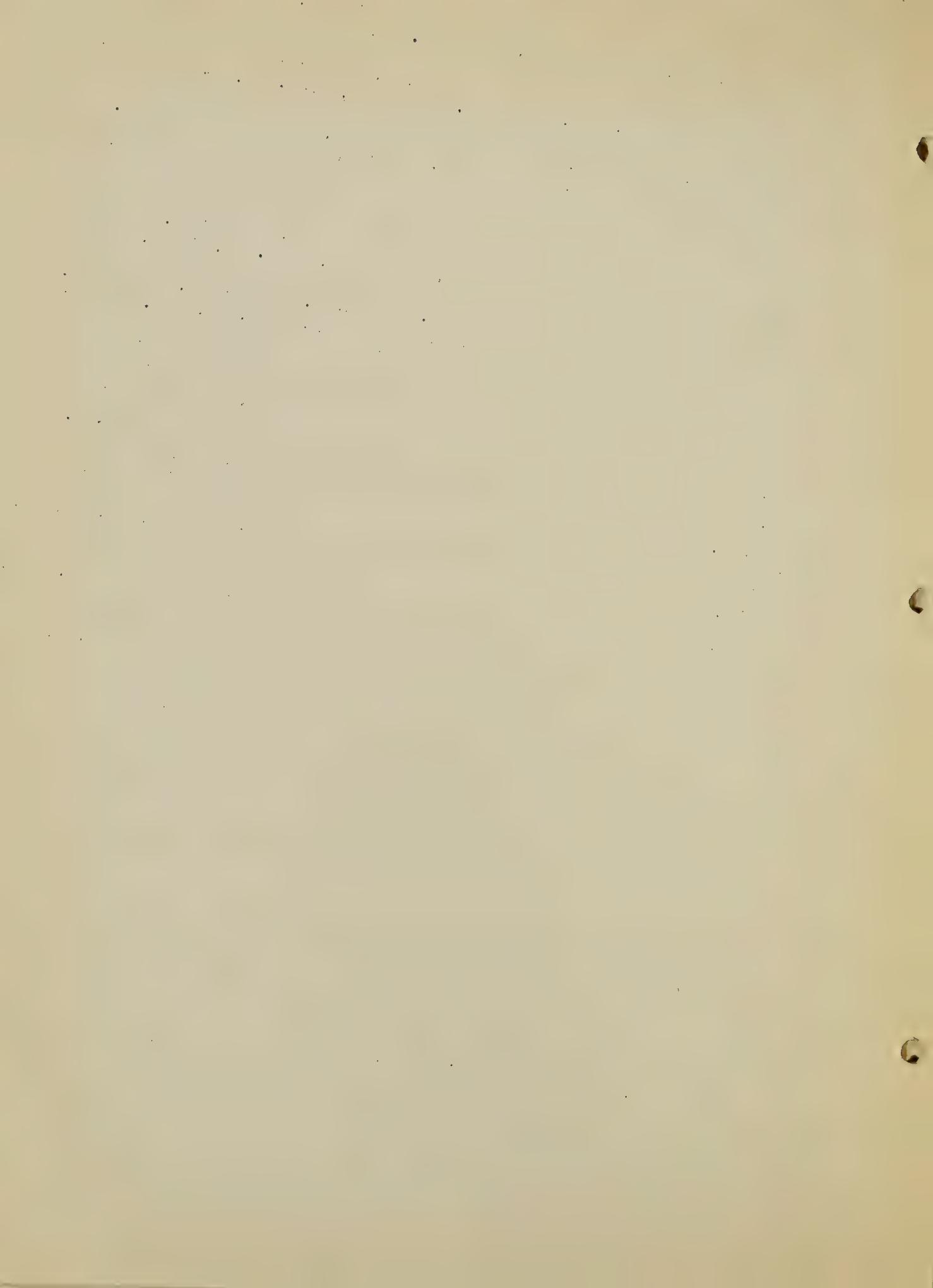
Third International Congress of Soil Erosion. Science. v. 81, no. 2091. January 25, 1935. p. 89-90. Will be held at Oxford, England, from July 30 to August 7, this year under presidency of Sir John Russell.

Tragic truth about erosion. Forest Preserve Association of New York State, Inc., Schenectady, N. Y., 1934. 20p.

Vegetation helps control soil erosion. By Horace J. Harper. Oklahoma Agricultural experiment station. Report, 1932-1934. p. 30-33.

Farm Buildings and Equipment.

Easy-to-build pig saver. By Tudor Charles. Missouri Ruralist. v. 75, no. 24. December 15, 1934. p. 10. Diagram.



Farm Buildings and Equipment. Cont'd.

Economics of long-lived farm structures. By William Boss. Agricultural Engineering. v. 16, no. 2. February, 1935. p. 61-64.

Fix up your farmstead. By R. B. Lawrence. Breeder's Gazette. v.99, no. 12. December, 1934. p. 3, 11. Uncle Sam provides new type of modernization credit. You can finance new buildings, roofs, paint, fences, drainage, and home improvement.

How to lay out a high corn crib. By H. A. Heinbeck. American Builder and Building Age. v.57, no. 3. March, 1935. p. 48-49, 84.

Money for farm repair inside and out. By R. B. Lawrence. Missouri Ruralist. v. 76, no. 2. January 26, 1935. p. 3, 17. Borrowing money to improve property now, means money in pocket for coming years. Building for better business in future and for more comfort in the home is serving. Longer farm repairs are neglected greater cost of making them, and more income farmer loses. Neglect of farm improvements is even more serious than of city homes, because lack of equipment for livestock or poultry raising almost always reduces quality and production. This in turn lowers farmers' income. Low rate money now available actually is money-in-the-pocket investment for farmer who will, in all probability, spend it to improve his premises to increase efficiency of his business.

Planning farm improvements. By H. A. Heinbeck. American Builder and Building Age. v. 57, no. 1. January, 1935. p. 38-39. Discusses general layout and plan.

They build to aid profits. By Tom Delohery. Capper's Farmer. v. 46, no. 3. March, 1935. p. 26, 37.

Farm Machinery and Equipment.

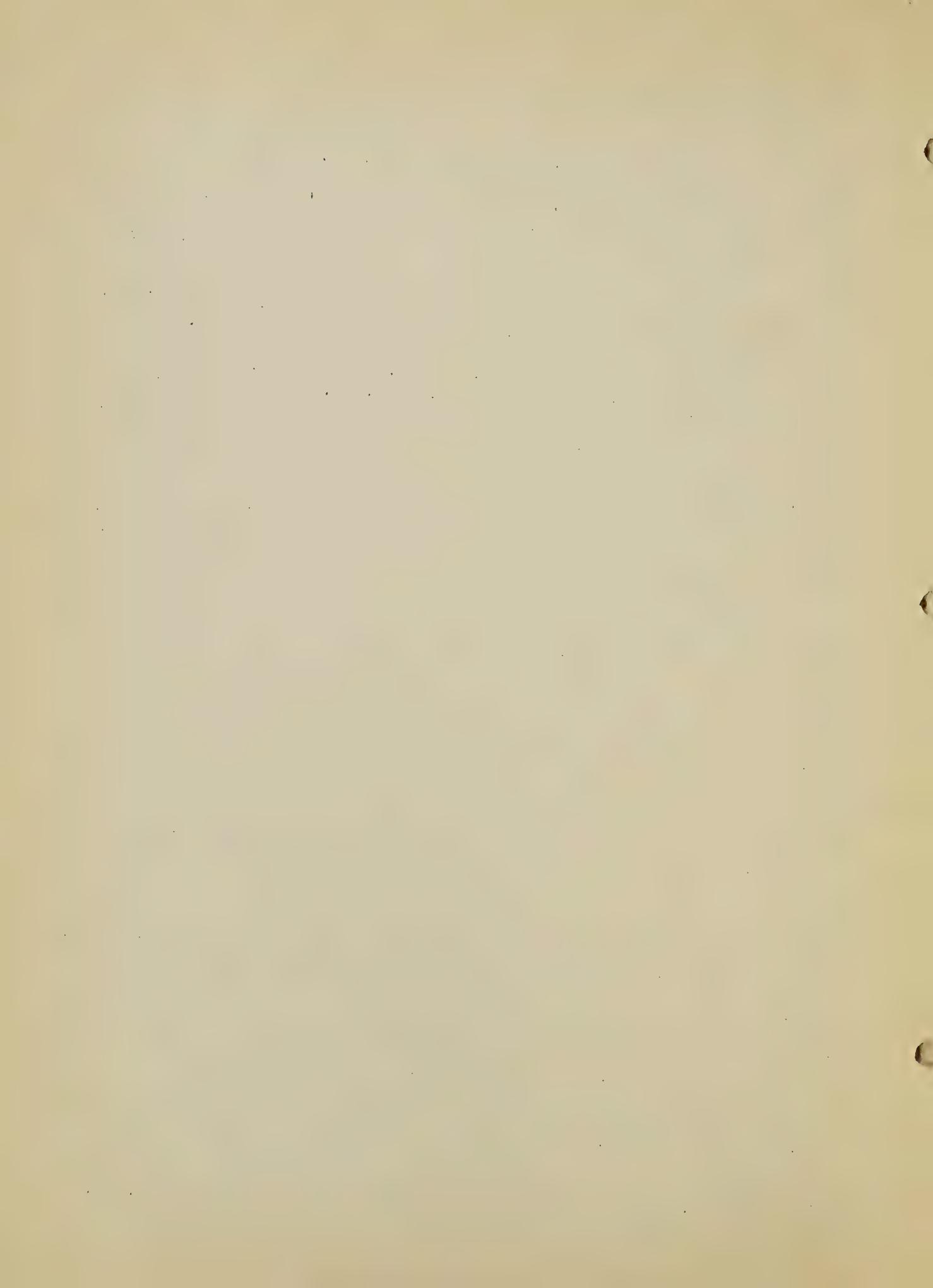
Baling hay from the windrow. Implement & Tractor. v.50, no. 5. March 9, 1935. p. 14-15, 34. Data from Iowa State tests indicate good results from modern equipment as farmers increase acreage seeded to grasses.

Economic forces cause amazing trade upswing. Implement & Tractor. v.50, no.5. March 9, 1935. p. 12-13, 36. Not enough tractors as farmers revert to more efficient power methods. New equipment brings wave of buying, but it is merely realizing long overdue demand.

Figures and facts brought out at Farm Machinery Conference. Implement Record. v. 32, no. 3. March, 1935. p. 12.

Machines transform farming. By Harry G. Davis. Nebraska Farmer. v. 76, no. 25. December 8, 1934. p. 30, 47. Modern farm tools made during life of Nebraska Farmer.

1935 machinery. By J. B. Davidson. Successful Farming. v. 33, no.3. March, 1935. p. 18-19, 47. Past year has been most fruitful in implement improvement for farmer-operator.



Farm Machinery and Equipment. (Cont'd)

Plans of ice cutting machine. Wisconsin Agriculturist and Farmer. v.62, no. 2. January 19, 1935. p. 5. Gives diagram.

Some trends in mechanised farming. II- Grass. By H. J. Denham. 1935. 7.p. Institute for research in agricultural engineering. University of Oxford. Reprinted from Scottish journal of agriculture. v. 18, no.1. January, 1935.

Farm Mechanics.

How to make a long splice. Hoard's Dairyman. v. 79, no. 22. November 25, 1934. p. 502.

How to tie useful knots. Hoard's Dairyman. v. 79, no. 22. November 25, 1934. p. 502.

Kinks for the repair shop. By Frank Bentley. Farm Implement News. v. 56, no. 4. February 14, 1935. p. 25. Springs for wrenches. To make a hot open fire. Kicking off file handles. Rolling out dents.

Fences.

Home - with a fence around it. American Home. v. 13, no. 2. January, 1935. p. 92-94.

Fertilizers.

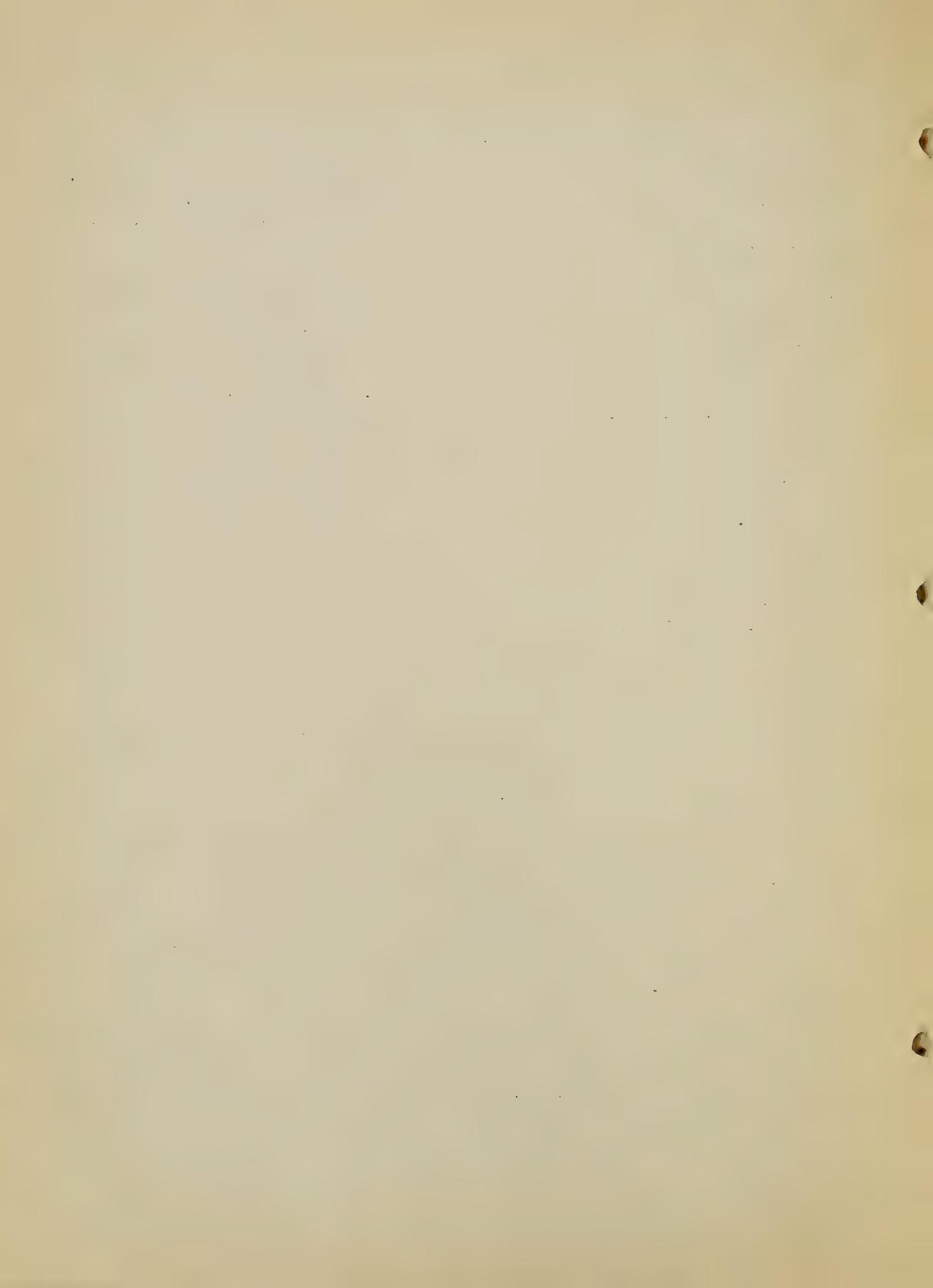
Fertilizer trends and practices. By Ernest Brauton. Pacific Rural Press. v. 129, no. 3. January 19, 1935. p. 46.

Fertilizers for cotton. By M. J. Funchess. Progressive Farmer. v.50, no. 2. February, 1935. p. 16. Formulas and quantities proves best by test.

Using stable manure. By L. R. Neel. Southern Agriculturist. v. 64, no. 12. December, 1934. p. 5. On most any real farm it would be easily possible to make annual production of stable manure worth as much as returns from average acre of cotton. On farm that runs several teams and has herd of dairy or beef cattle or both, value of annual production of manure may be equal to that of cotton from several average acres.

Fire Protection.

When fire strikes. By Fred Sheppard. Electricity on the Farm. v.8, no.2. February, 1935. p. 10, 18. There is no better insurance against property destruction by fire on the farm than modern pressure water system, with taps fitted with hose lines, placed in basement of farm house and in out-houses.



Fireplace.

Remoulding the fireplace. By J. W. Covert. Building Modernization. v. 3, no. 3. March, 1935. p. 16-19. Gives chart for determining fireplace openings.

Flood Control.

Reservoir as a flood-control structure: Discussion. By C. Maxwell Stanley. Proceedings of American Society of Civil Engineers. v. 60, no. 9, part 1. November, 1934. p. 1384-1387.

Flow of Water.

Approach to determinate stream flow: Discussion. By R. L. Gregory and C. E. Arnold. Proceedings of American Society of Civil Engineers. v. 60, no. 9, part 1. November, 1934. p. 1340-1351.

Energy of flow, pressure and momentum diagrams for the simple graphic solution of problems involving a change of section in a stream of water. Compiled by A.M.R. Montagu. 1934. 8 plates. India. Central board of irrigation. Publication no.4.

Flow of water around bends in pipes: Discussion. By D. Benjamin Gumenksy, Wallace M. Lansford and F. T. Mavis. Proceedings of American Society of Civil Engineers. v. 60, no. 9, part 1. November, 1934. p. 1388-1397.

Frictional resistance in artificially roughened pipes. By Victor L. Streeter. Proceedings of American Society of Civil Engineers. v. 61, no. 2. February, 1935. p. 163-186. Paper presents results of experimental investigation of frictional resistance in artificially roughened pipes. It has been undertaken in effort to show, qualitatively, effect on friction factor of certain artificial irregularities - varying in shape and size - that were introduced in pipes used for tests.

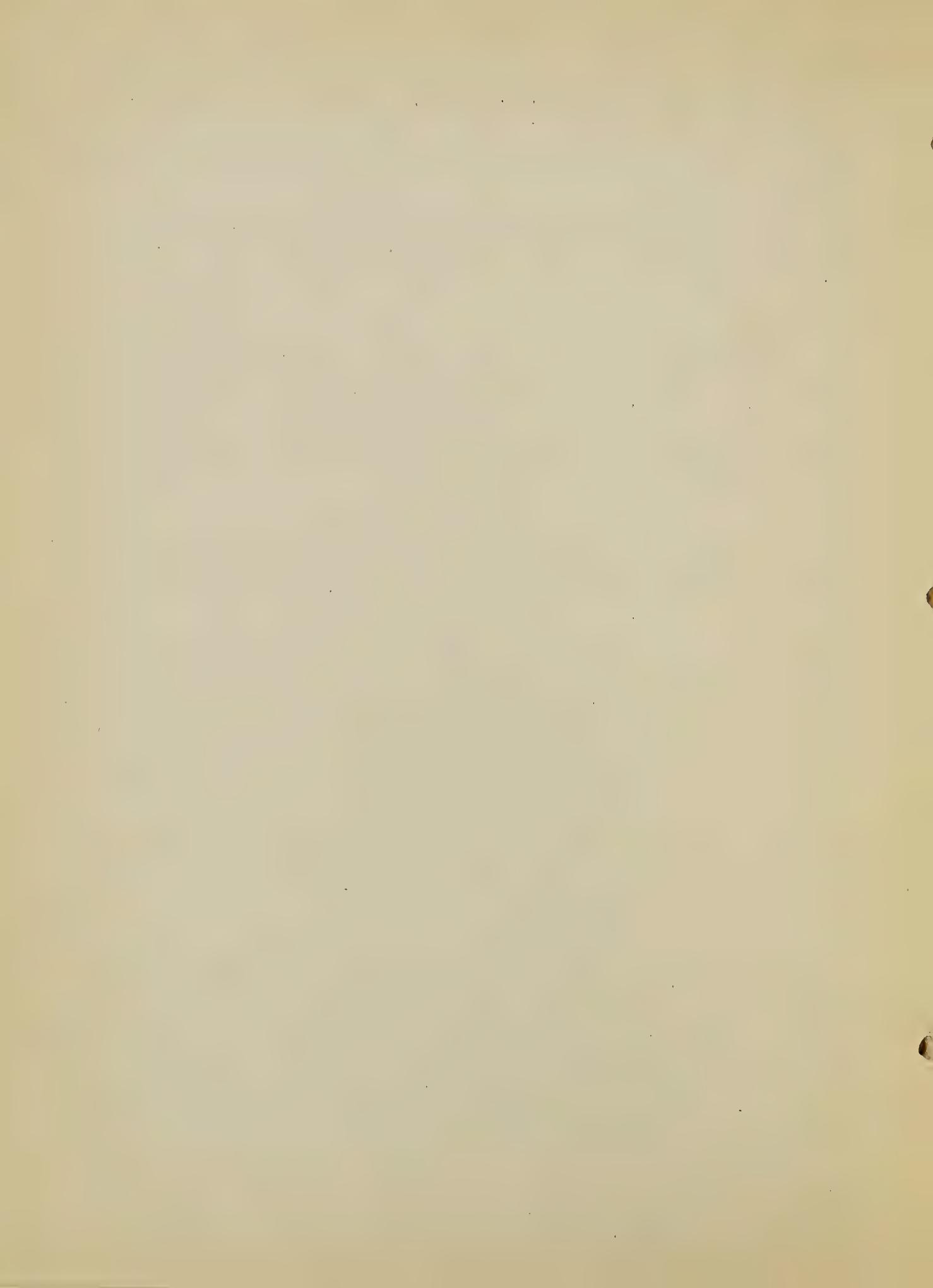
Sand mixtures and sand movement in fluvial models: Discussion. By V. V. Tchikoff, Morrough P. O'Brien and Bruce D. Ringlaub and Herbert D. Vogel. Proceedings of American Society of Civil Engineers. v. 60, no. 9, part 1. November, 1934. p. 1374-1383.

Flumes.

Concrete floor and timber sides used for flume in Colorado. Engineering News-Record. v. 114, no. 10. March 7, 1935. p. 353. Reinforced-concrete slab was laid down to form floor of flume. Rests on gravel blanket and is built without expansion joints. Drain pipes required to take care of seepage from canyon sides are installed in gravel blanket. Timber side walls are bolted to concrete floor; to facilitate renewing bolts 1 $\frac{1}{2}$  inch pipe is cast in floor through which tierods pass, bolting posts to side of floor. These tierods are made out of used pump rods. Planking is spiked to posts to complete flume sides.

Fuels.

Diesel fuel oil classification. Power Plant Engineering. v. 39, no. 3. March, 1935. p. 182.



Heating.

Greenhouse heating. Rural Electrification and Electro-Farming. v. 10, no. 116. January, 1935. p. 259-260. Interesting details of latest developments in greenhouse heating. Results of experiments by Horticultural Commissioner of Ministry of Agriculture and Fisheries.

Hotbeds.

Coldframes for tomato plants. By T. D. Holder. Southern Planter. v. 96, no. 2. February, 1935. p. 8-9.

Electric soil heating. Market Growers Journal. v. 56, no. 2. January 15, 1935. p. 32-24.

Greenhouse and soil heating. Rural Electrification and Electro-Farming. v. 10, no. 116. January, 1935. p. 263-264.

Hotbeds and coldframes. By W. R. Battie. 1935. 29p. U.S. Department of Agriculture. Farmers' Bulletin no. 1743.

Horses.

Mules and horses for me! By L. E. Childers. Oklahoma Farmer-Stockman. v. 47, no. 21. November 1, 1934. p. 5, 11. Men need work and its better for farmers as group if workers can be given employment by using teams.

Houses.

"Better stone houses for less" is Milwaukee builder's sales slogan. American Builder and Building Age. v. 57, no. 3. March, 1935. p. 33-35, 84.

Build houses that will grow. Michigan Farmer. v. 184, no. 3. February 2, 1935. p. 10. Floor plan.

Cabin and cottage building time is here. American Builder and Building Age. v. 57, no. 3. March, 1935. p. 40-41.

Farm homes at low cost. Oklahoma Farmer-Stockman. v. 47, no. 24. December 15, 1934. p. 5, 20. Diagrams

Farm house plans for 1935. American Builder and Building Age. v. 57, no. 1. January, 1935. p. 30-31. Practical, low cost rural designs.

Farm house that can grow. Nebraska Farmer. v. 77, no. 4. February 16, 1935. p. 10. Floor plan.

FHA house standards. American Builder and Building Age. v. 57, no 1. January, 1935. p. 20-21, 61.

Housing program for the United States. 1934. 22p. National association of housing officials, Chicago, Illinois.



Houses. Cont'd.

Low-cost fireproof home has arrived. By Alexander T. Saxe. American Home. v. 12, no. 6. November, 1934. p. 367, 398.

New farm homes needed. Oregon Farmer. v. 58, no. 1. January 10, 1935. p.13. Survey indicates \$7,600,000 will be spent on housing.

Planning the "add-a-room" house. By Ernest Irving Freese. American Builder and Building Age. v.57, no. 1. January, 1935. p. 24-26, 61. Innovation in house planning that meets an urgent present-day need.

United States housing market. By William K. Wittausch. Domestic Commerce. v.15, no.6. February 28, 1935. p.82-83. Map shows distribution by States.

Houses, Remodeling.

Rural FHA "modernization" speeds up. By John E. Pickett. Pacific Rural Press. v.128, no.22. December 1, 1934. p.425.

Ugly ducklings transformed. American Home. v.12, no.6. November, 1934. p.376-377, 400.

Hydraulics.

Hydraulic jump in terms of dynamic similarity. By Boris A. Bakhmeteff and Arthur E. Matzke. Proceedings of American Society of Civil Engineers. v.61, no.2. February, 1935. p.145-162.

Insulation.

Designing insulation into farm buildings. By G. D. Andrews. Heating and Ventilating. v.31, no.12. December, 1934. p.45. Presented at 28th annual meeting of Farm Structures Division of American Society of Agricultural Engineers, Detroit, June, 1934.

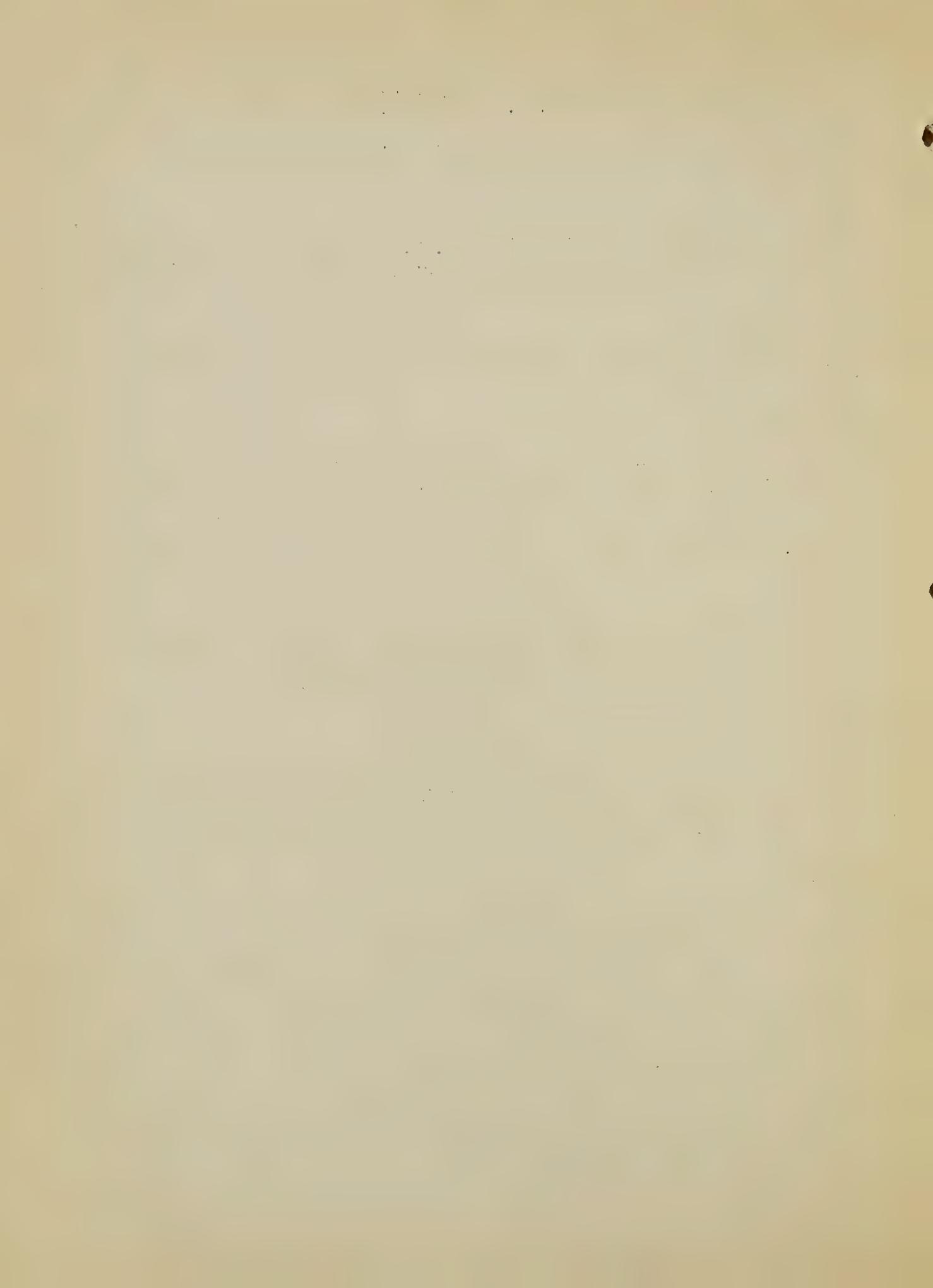
Irrigation.

Nation benefited by irrigation. By L. H. Mitchell. Reclamation Era. v.25, no. 2. February, 1935. p.27-28, 36.

Straight permanent irrigation furrows for citrus. Pacific Rural Press. v.129, no.4. January 26, 1935. p.81.

Sub-irrigation defeats the drouth. By Mrs. R. H. Bounds. Farm and Ranch. v.53, no.24. December 15, 1934. p. 14.

When irrigation water failed tractors proved crop savers. Implement & Tractor Trade Journal. v.50, no.4. February 23, 1935. p.13, 37. Pumping outfits proved real crop saved to many farmer who was hit by last year's widespread drouth.



Land Use.

Sound land policy needed. By D. P. Trent. Virginia Polytechnic Institute. Extension Division News. v.17, no.2. January, 1935. p. 1, 6-7. If every farmer in United States had adhered strictly to old idea that to mortgage home is disgrace, farmers of country would have avoided much of speculative whirlwind to which country has been subjected during past several years. If farmers must wait until they have cash to pay for farm many will never be able to own their homes. Reasonable credit in purchase of homes is necessary, but it must be upon sound basis, and land must be purchased at prices which have had speculative water squeezed out. Credit on land should be temporary thing, and should always be under such conditions as will enable farmer to liquidate indebtedness within reasonable time from products of land, and continue thereafter in full ownership and with land unencumbered.

Maps.

Preparing new maps of Tennessee River basin. By T. P. Pendleton. p.243-244. Inadequate existing maps hinder TVA work of planning. Planimetric maps made on 1 in.-2,000 ft. scale. Serial photography and rapid drafting are features.

Meters.

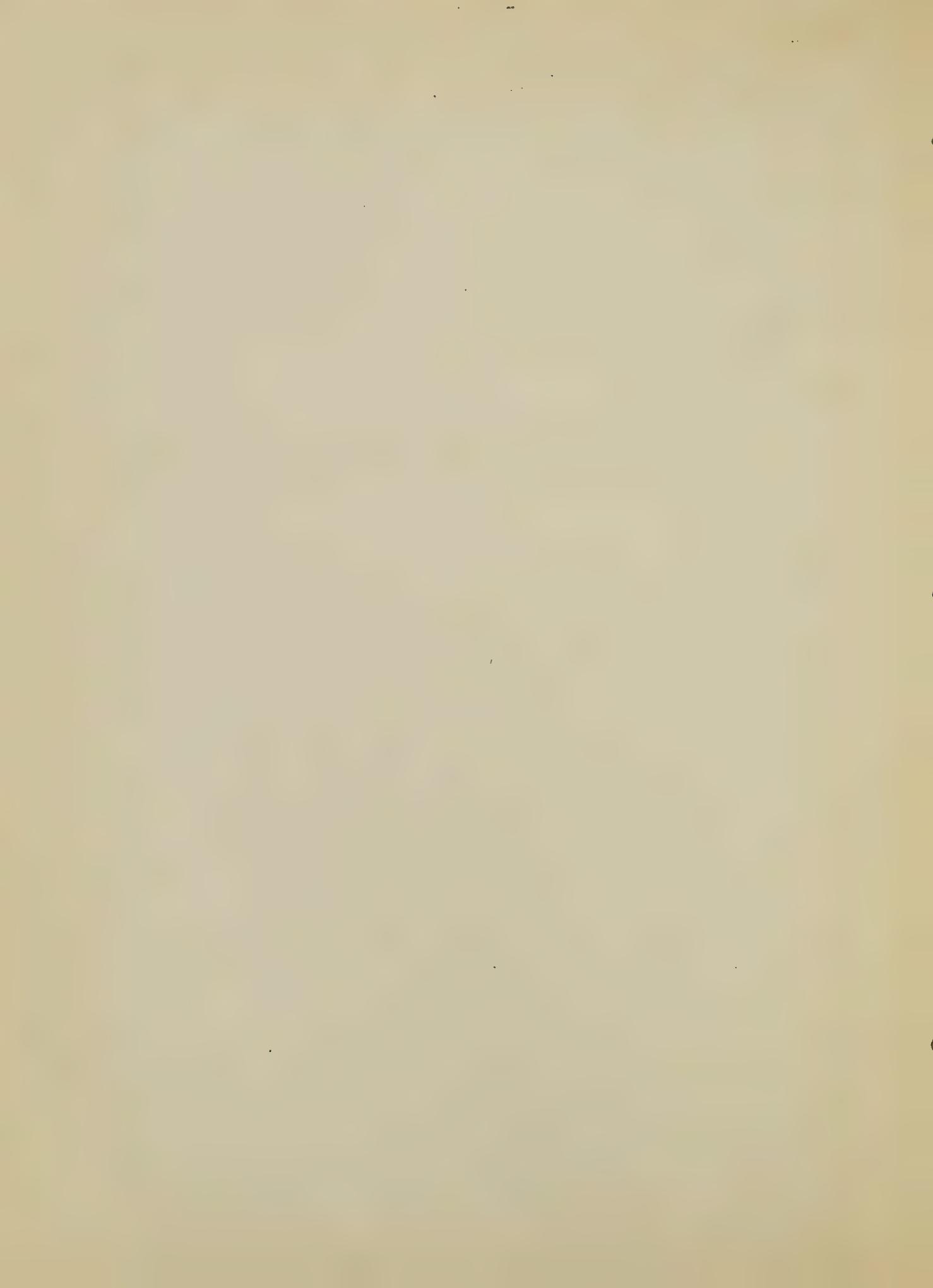
How current meter allows prediction of huge waves. Science News Letter. v.27, no. 718. January 22, 1935. p. 20. Devised by Dr. George F. McEwen, professor of physical and dynamical oceanography at Scripps Institution of Oceanography, La Jolla, California. Device, which operated on principle of pendulum, consists of perforated sphere set on gimbals free to move in two directions. Extent of movement is recorded on revolving waxed cylinder. From movement thus recorded along two lines at right angles to each other we can easily compute resultant line, which gives us direction and intensity of current. New instrument is designed to compile data on current movements for use in studying causes of huge waves which have rocked the coast of Southern California, and on occasions caused property damage. Attached to apparatus, which weighs 200 pounds in all, is magnetic needle which automatically locks after becoming settled, so that compass direction of currents is known.

New galvanometers. By L. O'Bryan. General Electric Review. v.38, no.2. February, 1935. p.103-104.

Miscellaneous.

Open air skating rink. Refrigerating Engineering. v.29, no. 1. January, 1935. p.30.

Report of the Science Advisory Board. July 31, 1933 to September 1, 1934. Washington, D.C., 1934. 303p.



Motors.

Power by electric motor. By H. M. French. Southern Power Journal. v.53, no.3. March, 1935. p.35-39. Choosing the proper mechanical type of motor.

National Resources Board.

National resources board. Report on national planning and public works in relation to natural resources and including land use and water resources with findings and recommendations. December 1, 1934. Washington. U.S. Government Printing Office. 1934. 5 parts. Part I. Report of the Board. Part II. Report of the Land Planning Committee. Part III. Report of the Water Planning Committee. Part IV. Report of the Planning Committee for Mineral Policy. Part V. Report of the Board of Surveys and Maps.

Reclamation and stream planning: Editorial. Engineering News-Record. v.114, no.5. January 31, 1935. p.176. Discussion of conclusions of National Resources Board.

Paints and Painting.

House paints. By John Marshall, J. W. Iliff and H. R. Young. Industrial and Engineering Chemistry. v.27, no.2. February, 1935. p. 147-152. Effect of climate, wood types, and priming practices. Large mass of evidence shows that extremes of climate represented by Florida and by dry-climate exposures may yield diametrically opposite results as regards effect of composition on paint durability. In general, it appears that valid conclusions from individual series of exposures involving single-panel tests of each paint, since differences in paint performance due to variations of wood, even in single species, may be greater in magnitude than differences introduced by maximum variations in composition met in normal practice in high-quality paint field. No valid basis appears from studies in question for stating that material difference in performance is given by use of aluminum priming as compared with simple oil reduction of topcoat material. Several general conclusions are drawn as to details of exposure testing of paints.

Painting for permanence. By George A. Steers. Capper's Farmer. v.46, no.3. March, 1935. p.40-41. Recent Government survey conducted among property owners showed that only one out of every three houses is properly painted and in good repair.

Plumbing.

When the farmer turns to plumbing. By R. W. Starbuck. New England Homestead. v.107, no.26. December 22, 1934. p.5, 10. Helpful hints for home repair jobs.

Poultry Houses and Equipment.

Dozen new poultry ideas into action. By Tudor Charles. Kansas Farmer. v.73, no.2. January 19, 1935. p.3, 16.



Public Works.

Construction activities with P.W.A. allotments. Reclamation Era. v.25. no.1. January, 1935. p.14.

Construction's stake in new deal activities. Engineering News-Record. v.114, no.9. February 28, 1935. p.311-315. Aside from normal public work financed by the PWA, the development of PWA theories relating to resource conservation, land use, decentralization of population and housing, all have an important bearing on the construction industry.

List of references on the federal emergency administration of public works and its work including certain references pertaining to the public works emergency housing corporation. Compiled by James T. Rubey. 1935. 24p. mimeographed. U.S. Geological Survey. Library. Bibliographical list no.2.

PWA inventory of available projects reaches high total. Engineering News-Record. v.114, no.9. February 28, 1935. p.332. Summary by States. Project Classification.

Pumps and Pumping.

Predictable performance of centrifugal pumps. By A. J. Stepanoff. Power Plant Engineering. v.39, no.2. February, 1935. p.102-103. Affinity relations, dynamic similarity and specific needs of centrifugal pump impellers useful for predetermination of pump performance.

Pumping by air - the air lift pump. By H. W. Mason. Southern Power Journal. v.53, no.3. March, 1935. p.40-43. Simple rugged device for pumping water, oil, or other liquids - theory of operation, mechanical requirements, efficiencies discussed from both theoretical and practical standpoints.

Rain and Rainfall.

Gambling with nature. By C. S. Burton. Magazine of Wall Street. v.55, no.6. January 5, 1935. p.326-327, 352-353. Table 1. Rainfall by States.

Relation of precipitation to moisture storage and crop yield. By A.F. Bracken and P.V. Cardon. Journal of American Society of Agronomy. v.27, no. 1. January, 1935. p.8-20. Particular phase of problem dealt with in this study is that of measuring percentage of rainfall saved in soil over whole period of fallow-crop cycle and fraction of cycle as related to water cost of crop production. Results reported represent accumulated data from Nephi Dry-Land Substation, Nephi, Utah, from 1909 to 1918, and from 1925 to 1933, both inclusive.

Reclamation.

Columbia Basin and Grand Coulee projects. By F. A. Banks. Civil Engineering. v.4, no.9. September, 1934. p.456-459.



Reclamation. Cont'd.

New Deal for reclamation. By J. Rupert Mason. Reclamation Era. v.25, no.2. February, 1935. p.25-26.

Reclaiming alkali lands. Pacific Rural Press. v.129, no.3. January 19, 1935. p.49. If it is white alkali it is drainage which is called for. Black alkali calls for sulfur.

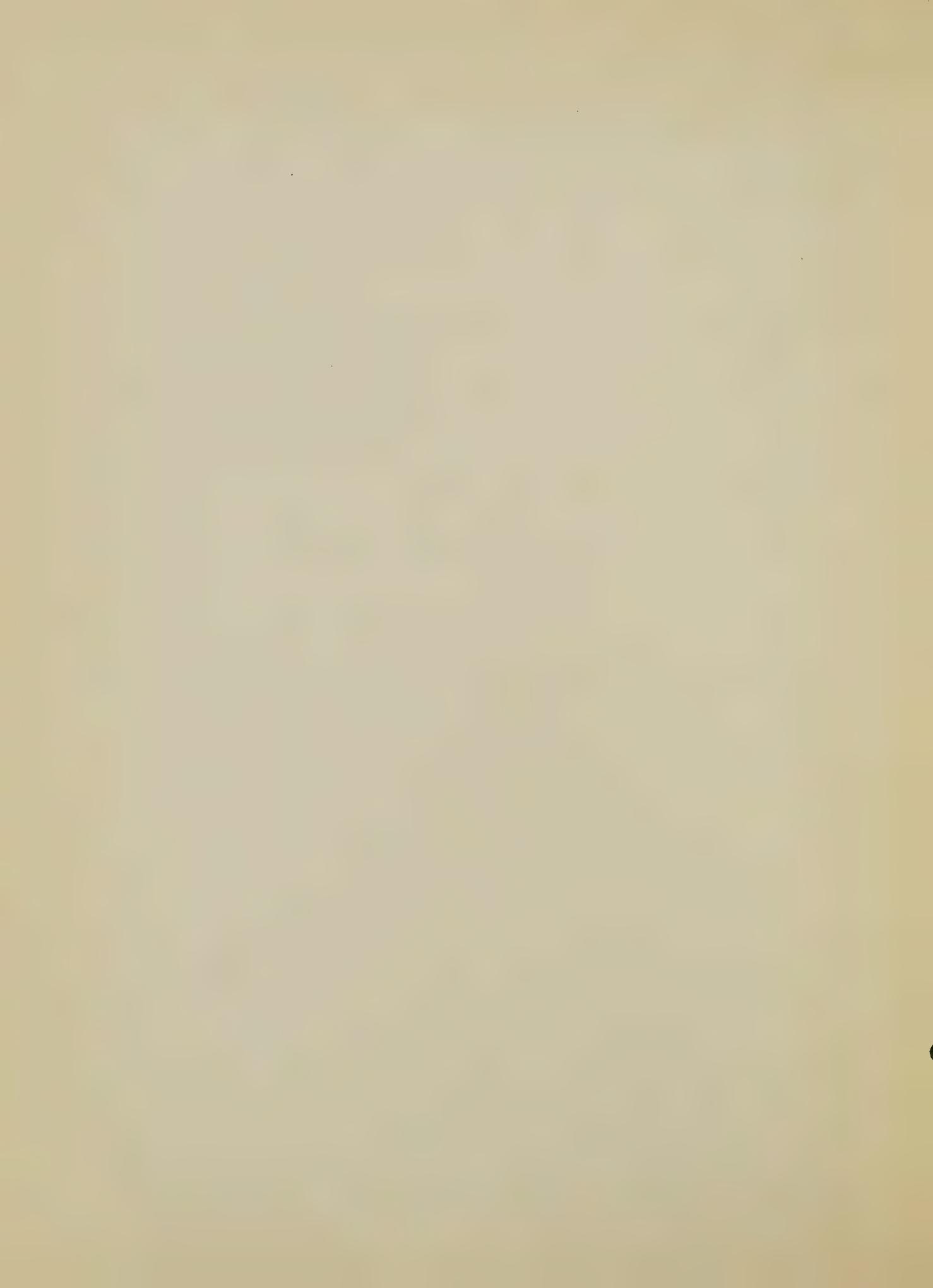
Reclamation. By James J. Pope. Reclamation Era. v.25, no.1. January, 1935. p.3-5.

Reclamation under new deal. By Elwood Mead. Reclamation Era. v.25, no.1. January, 1935. p. 1-2, 5. National Reclamation Association an educational influence. Federal Reclamation is a business policy. Public Works Administration aids reclamation. P.W.A. funds for reclamation aid in Administration's drought relief and unemployment programs. Complete water basin development on long term planning recommended. Aid and direction in settlement are needed. Power and irrigation complement each other. Reclamation projects offer security to dry land farmers. Report on Federal reclamation being prepared.

Report on federal reclamation to the Secretary of the Interior. By John W. Haw and F.E. Schmitt. December 1, 1934. Washington. Government Printing Office, 1935. 133p.

Report on survey of federal reclamation in the West. By F. E. Schmitt and John W. Haw. Report based on impartial survey of Federal reclamation in the West. On basis of inspection of typical projects and study of conditions and problems of reclamation, committee made following findings: 1. Reclamation by irrigation of land in arid and semiarid western half of United States is shown by its results to be sound and desirable national undertaking. It represents constructive policy of social development. 2. Reclamation should be continued by Federal Government as available means may permit. 3. Except for influence of present depressed farming conditions operating projects are in main excellently developed, and represent strong prosperous communities. 4. Present reclamation procedure encounters its most troublesome problems in financial relations between water users and the Government. 5. In interests of full and efficient utilization of stream waters, best plan of development as between different regions in basin and most efficient arrangement of individual project, it is desirable that selection and planning of projects be improved by establishing cooperation with States, and by authorizing Bureau of Reclamation to develop its project plans on basis of best regional results. 6. For permanent security of irrigated agriculture, future reclamation should, if practicable, include measures that will prevent overdevelopment of land beyond available water supply. Control of storage should remain in hands of Federal Government to assure equitable distribution. 7. Uniform policy to govern power developed or to be developed in connection with reclamation projects should be established by law.

Resume of preliminary report on development of rivers of United States. By W. I. Swanton. Reclamation Era. v.25, no.1. January, 1935. p.7. Prepared to give Congress information for guidance of legislation which



Reclamation. Cont'd.

will provide for maximum amount of flood control, navigation, irrigation, and development of hydroelectric power, by President's committee on water flow, June 4, 1934, House document no. 395, Seventy-third Congress.

Some characteristics of Snake River. By E. B. Darlington. Reclamation Era. v.25, no.1. January, 1935. p.19-20. Source of water supply. Location of main projects. Maintenance problems.

Refrigeration.

Cooling milk on the farm with small mechanical outfits. By R.P. Hotis and J.R. McCalmont. 1934. 24p. U.S. Department of Agriculture. Circular no.336.

Methods of cooling and storing cream for Oregon's dairy farms. By G.H. Wilster, Hans Hoffman, and P.M. Brandt. 1934. 29p. Oregon. Agricultural experiment station. Bulletin no.326.

Refrigeration and readjustment in Tennessee Valley. By W. R. Woolrich. Refrigerating Engineering. v.29, no.1. January, 1935. p.13-14.

Research.

Current hydraulic laboratory research in the United States. January 1, 1935. 1935. 83p. mimeographed. U.S. National bureau of standards.

Research projects at colleges and universities. Heating and Ventilating. v.32, no.1. January, 1935. p.17-19. Steam and hot water heating. Heat transfer. Ventilation and air flow. Air conditioning. Miscellaneous.

Rivers.

Study of New England rivers planned by Commission. Engineering News-Record. v.114, no.8. February 21, 1935. p.299. To investigate pollution, flood control and other problems in connection with Connecticut, Merrimack and Blackstone River valleys.

Roofs.

One way of over roofing. Building Modernization. v.3, no.3. March, 1935. p.24, 35.

Run-off.

Relation between rainfall and run-off from small urban areas. By W.W. Horner. Proceedings of American Society of Civil Engineers. v.60, no.8. Part 1. October, 1934. p.1135-1178. Results of research into relation between rainfall and run-off from small urban areas in St. Louis, Missouri, are here presented as specific studies of run-off from parts of two different city blocks tributary to street inlets, and from both roofs and ground surface of another entire city block. Information submitted results from measurements of rainfall



Run-off. Cont'd.

and storm flow for practically all heavy rains occurring from 1914 to 1933. Ration of run-off to rainfall, defined in several ways, is shown to vary over a wide range.

Seawalls.

Wave pressures on sea-walls and breakwaters: Discussion. By T. L. Condron and Chester L. Post. Proceedings of American Society of Civil Engineers. v.61, no.2. February, 1935. p.250-254.

Seepage.

Security from under-seepage masonry dams on earth foundations: Discussion. By W. M. Griffity and E. McKenzie Taylor. Proceedings of American Society of Civil Engineers. v.61, no.2. February, 1935. p.258-263.

Seepage and pumping in Mississippi River cofferdams. By H.G. McCromick. Engineering News-Record. v.114, no.10. March 7, 1935. p.339-342. Conclusions based on experience with seven cofferdams enclosing about eight acres each for lock construction on upper Mississippi River slack-water navigation improvement project.

Septic Tanks.

Septic tank for the farm home. 1935. 7p. Washington state college. Extension service. Extension bulletin no.200.

Silos.

Trench silo insures reserve feed. Oklahoma Farmer-Stockman. v.47, no.21. November 1, 1934. p.5, 11.

Silt.

Silt problem. By J. C. Stevens. Proceedings of American Society of Civil Engineers. v.60, no.8, part 1. October, 1934. p.1179-1222. All basis data that the writer could secure on silting of reservoirs, where actual capacity surveys have been made to determine extent of silting, are contained in this paper. Remedial measures for silt determination are presented and discussed. Table contains brief of all data on silt transported by streams of world. Physical laws of silt transportation are outlined, with pertinent discussion. Control of silt in canals, reservoirs, and on water-sheds is then considered. Paper closes with data and discussion on origin of silt.

Silt problem. Discussion. By Harry G. Nickle. Proceedings of American Society of Civil Engineers. v.61, no.2. February, 1935. p.270-274.

Transportation of bed-load by streams. By Morrough P.O'Brien and Bruce D. Rindlaub. 1934. 594-603p. Reprinted from Transactions of the American Geophysical Union. Gives result of critical survey of available data made to ascertain whether or not quantitative prediction of bed-movement is now possible.



Soils.

Base exchange and related properties of the colloids of soils from the erosion experiment stations. By C. S. Slater and H.G. Byers. 1934. 20p. U.S. Department of Agriculture. Technical bulletin. no.461.

Methods for determining the hydrogen-ion concentration of soils.

By E. F. Snyder. Revised, 1935. 48p. U.S. Department of Agriculture. Circulat no.56.

Saving and studying soils. Arizona Producer. v.13, no.23. February 15, 1935. p.1, 15. Work begun at Erosion Service Station; significant discoveries made.

Soil conservation and moisture control. By N. E. Winters. Oklahoma. Agricultural experiment station. Report, 1932-1934. p.9-19.

Soil survey is vital factor. Oregon Farmer. v.58, no.1. January 10, 1935. p.6. Soil survey is used: (1) to give invoice of land resources; (2) to guide county agricultural agents in advising farmers or other settlers; (3) to help determine irrigation or drainage requirements and feasibility, or crop adaptation and fertilizer needs; (4) to assist in locating stable roadways; (5) to serve as foundation for developing permanent system of agriculture for each type of soil and every farm; (6) to help stabilize agriculture and lessen guesswork in farming; (7) to give basis for rationalization of land assessments. When completed soil survey is needed as foundation for land use planning and crop adjustment program. It makes available information by which good, medium and poor soil areas can be recognized. Program of land and water use, based partly on 10-point program of Oregon Reclamation congress, may well include: 1. Completion of soil survey, especially of agricultural areas, and land classification based thereon. 2. Extension of program of soil analyses fertilizer research based on soil survey. 3. Study of water control by irrigation or drainage, to avoid alkali, control acidity, prevent erosion, and secure efficient soil moisture use. 4. Invoice of soil organic matter. 5. Utilization of land products and waste materials on farm so that they may become raw materials of industry. 6. Use good lands first and return marginal lands to pasture, reforestation, industrial or recreational use, and allow fertility to accumulate until there is more definite demand for other higher use. 7. Drainage areas necessary for future water supply should be protected against destruction of immature timber and vegetation. 8. Program of deferred regulation grazing on public domain. 9. Efficient land use should lessen cartage, and afford more protection for local markets and local growers. 10. Use of land for recreational purposes will become of increasing importance.

Theory and practice of soil sterilization. By A. G. Newhall. Agricultural Engineering. v.16, no. 2. February, 1935. p.65-70. Chemical disinfestation; steam sterilization methods; electric soil sterilization.



### Subsistence Homestead.

Rural rehabilitation, its meaning and scope. By C. O. Stott. Utah Farmer. v.55, no. 14. February 25, 1935. p. 3, 14. Rural rehabilitation is helping economically stranded persons to establish themselves in rural areas on self-sustaining basis.

Subsistence homesteads: a government activity in residential building. Heating and Ventilating. v.31, no. 12. December, 1934. p.41-44, 68-69. What they are; where they are; how they are built, and how they are heated.

### Surveying.

Geodetic control net aided by PWA-financed work. By W. Bowie. Engineering News-Record. v.114, no.9. February 28, 1935. p.316-317. Work during seven months of 1934 added 63,000 miles of leveling and 13,700 miles of triangulation arcs to country's control system.

Triangulation in Missouri. By Walter F. Reynolds. 1927 datum. 1934. 178p. U.S. Coast and Geodetic Survey. Special publication no.186.

### Temperatures.

Effect of raising storage temperature of late grown Irish Cobbler potatoes. By R. A. Jehle and J.W. Huberger. American Potato Journal. v.11, no. 11. November, 1934. p. 299-302.

### Terracing.

Farming to fit terraces. The Tudor Charles. Kansas Farmer. v.73, no.1. January 5, 1935. p.3, 16. Terracing and ditching to stop soil-washing and to hold moisture, are first steps in new kind of farming that is growing up in Kansas. Next thing is to work out practical way of farming to fit terraces.

Report of the action of the September 20, 1934, rain on the terrace drainage system at the Perkins farm. By H. H. Wallace. Oklahoma Agricultural experiment station. Report, 1932-1934. p.19-22.

Safety factor in terrace design. By L. E. Hazen. Oklahoma Agricultural experiment station. Report, 1932-1934. p.284-295.

Soil saving at a dollar an acre. By Raymond H. Gilkeson. Missouri Ruralist. v.76, no.2. February 26, 1935. p.14. Diagram shows how terracing job worked out on 35-acre hill farm.

Studies on moisture movement on terraced soils. By Horace J. Harper. Oklahoma Agricultural experiment station. Report. 1932-1934. p.28-30.

Terrace making and maintenance. Farm Machinery and Equipment. no.1813. January 15, 1935. p.18. Prevention of soil erosion in hands of individual farmer.



Tires.

Application of rubber tires to combines. By I. D. Mayer. Agricultural Engineering. v.16, no.2. February, 1935. p.53-54, 60. Progress report of one season's work with low pressure pneumatic rubber tires upon combined harvester thresher. Judging from this one season's tests it appears that use of low-pressure pneumatic tires on combines offers advantage of reduced vibration, lower drawbar pull which might in some cases permit use of smaller tractors, lower fuel consumption, greater comfort for operators, and much easier transportation on highways. It appears that greatest disadvantage of rubber wheel equipment for combines are increased cost of equipment and hazards of punctures.

Hare's feet for the tortoise. Farm Machinery and Equipment. no.1813. January 15, 1935. p.16.

Pneumatic tractor tires on listed crop ridges. By Frank J. Zink. Agricultural Engineering. v.16, no.2. February, 1935. p.57-60. Various measures and recommendations in probable order of greatest value: 1. Rows spaced 42 inches, with spacing as consistent as possible. 2. Tractor tread width should be twice row spacing. 3. Under difficult conditions use lug type chains. 4. Wheel flanges, both front and rear, appear as best ultimate solution of problem of steering control. 5. Rolling and dragging ridge tops was helpful. 6. Normal inflation pressures and tire sizes.

Study of users' experiences with rubber-tired farm tractors. Summarized and reported by C. W. Smith. Agricultural Engineering. v.16, no.2. February, 1935. p.45-52.

What of the air tire in 1935? Farm Implement News. v.56, no.4. February 14, 1935. p.26. American farmers spent more than \$4,000,000 for them in past two years. Signs point to sizable increase this year.

Tractors.

Efficiency of the tractor. Implement and Machinery Review. v.60, no. 717. January 1, 1935. p.784-786. Whole question of scope of tractor in farming and current tendencies in design, as well as relative efficiency of different types and attempts to apply power generated more directly to actual field services, were discussed at considerable length at Royal Society of Arts, London, on December 4, (1934).

Growing potatoes with tractor power. By R. U. Blasingame. American Potato Journal. v.11, no.8. August, 1934. p.199-204. Table shows man hours, tractor hours, fuel and oil required per acre in growing potatoes with all-purpose tractor.

Servicing the farm tractor. By Clifton E. Thomas. Tractor Farming. v.20, nos. 1 & 2. January-February, 1935. p.18. Diagram of elevated storage tank.

Tractor power in California. By H. B. Walker. Implement Record. v.32, no.3. March, 1935. p. 13-14. How horses are being replaced. Trends and future possibilities.



Walls.

Determination of trapezoidal profiles for retaining walls: Discussion.  
By M. A. Drucker. Proceedings of American Society of Civil Engineers.  
v.61, no.2. February, 1935. p.255-257.

Waste Products, Utilization.

Manufacture, composition, and utilization of dairy byproducts for feed.  
By Mayne R. Coe. 16p. U.S. Department of Agriculture.  
Circular no.329.

Utilization of agricultural wastes. By Max Levine, G. H. Nelson, D.Q. Anderson, and P.B. Jacobs. Industrial and Engineering Chemistry. v.27, no.2. February, 1935. p.195-200. In course of studies on utilization of farm wastes, especially production of fuel gas by fermentation, attempts to develop specific anaerobic lignin-digesting flora were unsuccessful. Alkali lignin, when added to entirely digesting sludge, produced practically no gas, even under optimum conditions: furthermore, when such alkali lignin was used in conjunction with fermenting cornstalk flour or packing-house sludge, gasification of latter materials was markedly inhibited. This depressive effect is apparently not due to toxic action of lignin on bacterial flora, but is presumably due to chemical combination, with possible production of complexes very resistant to microbial decomposition. Considerable portion of reported losses in lignin, attributed to microbial decomposition, may be explained by technic of selection and preparation of sample for lignin analysis.

Water Purification.

Means of clarifying pond water studied. By Horace J. Harper. Oklahoma. Agricultural experiment station. Report. 1932-1934. p.27-28.

Water Supply.

Easy-to-build farm ponds save water-hauling. By Raymond H. Gilkeson. Kansas Farmer. v.72, no.22. November 24, 1934. p.3, 11.

Water, land relationship. By William Peterson. Utah Farmer. v.55, no.13. February 10, 1935. p.5, 16. There are at least five methods in which water supply of State might be materially increased: 1. Preserving all seepage loss from irrigation canals. 2. More economic use of irrigation water. 3. Building reservoirs to prevent flood water waste. 4. Trans-diversion from streams having more water than land. 5. Careful and economic development of underground water. If agriculture is to be maintained in state we must recognize necessity of more economic application of water, sealing of canals, trans-diversion from streams having surplus, economic and consistent development of underground water, and building dams on each stream to conserve flood waters giving more seasonal use, and in such procedure lies hope of security to hundreds of young couples who are now worrying whether they can live here or go somewhere else to obtain a living.



Water Supply. Cont'd.

Water-supply conditions in drought-stricken regions. By O. E. Meinzor. Public Works. v.65, no.9. September, 1934. p.19-20. Existing conditions. Prospects for replenishment. Remedial measures.

Water System.

Running water an every-hour necessity. By John C. Myers. Farm Implement News. v.56, no.5. February 28, 1935. p.18-19.

Weather.

Some observations on forty-six years of Ohio weather. By C.A. Patton. 1934. 32p. Ohio. Agricultural experiment station. Bulletin no.544.

Weirs.

Aeration of sharp-crested weirs. By Joe W. Johnson. Civil Engineering. v.5, no.5. March, 1935. p.177-179. Three problems are involved in aeration of weirs in which end contractions have been suppressed. (1) Effect of reduction in pressure under nappe on observed head-quantity relationship or on weir coefficient; (2) Quantity of air which can be removed by nappe and effect of backflow of air bubbles; and (3) required size of air inlets to replace air withdrawn by the nappe.

Wells.

Garden wells. By Harry Irving Shunway. American Home. v.12, no.6. November, 1934. p.374-375, 423.

Wheels.

Methods of testing drivewheels and tracks. By A. W. Clyde. Agricultural Engineering. v.16, no.2. February, 1935. p.55-56, 60. In order to study wheel or track, following should be found for various pulls: 1. Input force or tractive force on wheel or track sprocket at no-load rolling radius or ring as selected. This is secured by measuring input torque delivered to drivewheels and dividing by proper radius. On level ground at low speeds this force is used in overcoming rolling resistance and drawbar pull. 2. Drawbar pull or output force. 3. Slippage or travel efficiency. This may be based on ring of wheel, but I prefer to base it on distance travelled per revolution at no load under tractor's own power.

Windmills.

Don't waste all the wind! By J. Leo Ahart. Farm Journal. v.59, no.3. March, 1935. p. 4. 19. Specifications for successful wind electric plant. 1: It must be able to produce current in lower winds which prevail most of time. 2: Generating head must have unobstructed exposure well above nearby trees and buildings. 3: There must be



Windmills. Cont'd.

reliable automatic governing device to protect propeller and generator in high winds. 4: Storage battery must be large enough to tide over expected periods of calm. 5: Quality of construction must be such that inspection and repairs will be minor items.

Wire.

To help you select insulated wire and cable. By R. B. McKinley  
Factory Management and Maintenance. v.92, no.10. October,  
1934. p.467-468.

Wood Preservation.

Sheet lead shields prevent damage by termites. Building Material,  
Merchandising Digest. v.3, no.11. November, 1934. p.3. Detail  
of lead termite shield for simple frame construction. Specifica-  
tion to prevent termite damage.

